



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. .... 10/821,424  
Filing Date ..... April 9, 2004  
Priority Date ..... April 12, 2003  
5 Inventorship ..... Pangrle  
Group Art Unit..... 2837  
Examiner .....  
Attorney's Docket No. .... BJP-001US  
10 Title: Virtual Instrument

PRELIMINARY AMENDMENT SUBMITTED CONCURRENTLY WITH  
INFORMATION DISCLOSURE STATEMENT

15 MAIL STOP: AMENDMENT  
To: Honorable Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
20 From: Brian J. Pangrle  
1312 South Maple Street  
Spokane, WA 99204

INTRODUCTORY COMMENTS

Please amend the above-identified application in accordance the directions set forth below. This response includes Amendments to the Drawings.

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Amendments to the Drawings include both attached replacement sheets and annotated sheets showing changes.

Applicant respectfully request entry of the amendments prior to  
10 publication of the instant application, which is projected to be October 14, 2004.

AMENDMENTS TO THE DRAWINGS

Please amend the drawings of the present application as set forth below.

Sheet 5/11 (Amend Figure 11)

- 5           The requested amendment to Sheet 5/11 replaces equations for  $r_1$  and  $r_2$  in Figure 11 with the following:

$$- - r_1 = r \cdot \cos(\gamma_1/2) - -$$

$$- - r_2 = r \cdot \cos(\gamma_2/2) - -$$

- 10           The parameters  $r_1$  and  $r_2$  are referenced in the text of the instant specification as follows:

          The derivation may start by determining chord length based on radius,  $r$ , and the angles  $\gamma_1$  and  $\gamma_2$ . Then the derivation may determine an apothem for each chord. The first apothem,  $r_1$ , and the second apothem,  $r_2$ , form legs of a first right triangle and a  
15           second right triangle and, in this exemplary scenario, the sum of the upper angles  $\alpha_1$  and  $\alpha_2$  of the two right triangles is equal to the angle  $\alpha$  between the first apothem and the second apothem.

Specification at page 15, lines 22-25.

- The parameters  $r_1$  and  $r_2$  are a first apothem for a first chord and a  
20           second apothem for a second chord. The apothem is the distance from the midpoint of a chord to the center of a circle. Equations for the apothem of a chord are known to one skilled in mathematics. For example, an attachment includes a copy of a website of the Math Forum of Drexel University (Ask Dr. Math: FAQ). This website presents "d" as the apothem, which is equal to  
25            $r \cdot \cos(\Theta/2)$ . In Figure 11, " $\gamma$ " denotes the equivalent of " $\Theta$ ".

Applicant respectfully requests entry of the proposed amendment to sheet 5/11 such that the equations for  $r_1$  and  $r_2$  correspond to the text.

Sheet 6/11 (Amend Figure 16)

The requested amendment to Sheet 6/11 brings the dashed line from 110' forward ahead of the shadow.

Applicant respectfully requests entry of the proposed amendment to Sheet 6/11 to correctly place the dashed line from 110'.

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Conclusion

Applicant respectfully request entry of the amendments prior to publication of the instant application, which is projected to be October 14, 2004.

Claims 1-20 are pending and believed to be in condition for allowance.

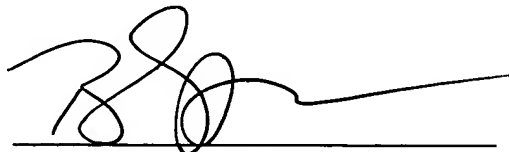
10 Applicant respectfully requests reconsideration and prompt issuance of the present application. Should any issue remain that prevents immediate issuance of the application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

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Respectfully Submitted,  
Brian Pangrle  
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Spokane, WA 99204

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Dated: 7-6-04



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